

1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image

PN - US5745182 A 19980428 [US5745182]

TI - (A) Method for determining motion compensation

PA - (A) MATSUSHITA ELECTRIC IND CO LTD (JP)

PA0 - Matsushita Electric Industrial Company, Ltd., Osaka [JP]

IN - (A) YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)

AP- US27801094 19940720 [1994US-0278010]

FD -

Divsn of US970046 19921102 [1992US-0970046]

Division of: US5369449

PR-

JP18198092 19920709 [1992JP-0181980]

JP29300491 19911108 [1991JP-0293004]

US27801094 19940720 [1994US-0278010]

US97004692 19921102 [1992US-0970046]

IC -

(A) H04N-007/32

EC - H04N-005/14M2

H04N-007/26P36E

H04N-007/36E

H04N-007/36E4

H04N-007/36E8

PCL - ORIGINAL (O) : 375240160; CROSS-REFERENCE (X) : 348699000

DT - Basic

CT - US4691230; US4862266; US4864294; US4989089; US4998168; US5021881; US5027205; US5036393; US5049991; US5072293; US5093720; US5105271; US5132792; US5138446; US5142361; US5144427; US5157742; US5162907; US5175618; US5191414; US5200820; US5210605; US5424779; US5436674; EP0395440 A2; EP0395271 A2; EP0447068 A2; EP0484140 A2

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Patent Abstracts of Japan, vol. 016, No. 097 (E-1176) 10 Mar. 1992 & JP-A-03 276 988 (Victor Company of Japan Ltd) 9 Dec. 1991.

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Takeshi Yukitake, "Field-Time Adjusted MC for Frame-Base Coding" CCITT SGXV Working Party XV/1 Experts Group for ATM Video Coding, AVC-194 MPEG 92/024s, Dec. 1991.

Shuji Inoue, et al "Motion Compensation Method for Interlace Video" Spring conference of the Institute of Electronics Information and Communication Engineers of Japan, 1992.

STG- (A) United States patent

AB - A method for predicting motion compensation for determining of an input image based on a motion vector of the input image from this input image to a reference image which has been

sampled at a first set time, and the method includes calculating a motion vector of the input image based on a move, at a second set time, of a block unit which is a part of the input image and consists of a plurality of pixels, and calculating a motion vector of the reference image based on a move, at the first set time, of a block unit which is a part of the reference image and consists of a plurality of pixels. Move compensation of the input image is calculated both from the motion vector of the input image and from the motion vector of the reference image, to thereby realize a method for determining motion compensation with high precision.

1 / 1 LGST - ©LEGSTAT

PN- US 5745182 [US5745182]

AP- US 278010/94 19940720 [1994US-0278010]

DT- US-P

ACT - 19940720 US/AE-A

APPLICATION DATA (PATENT)

US 278010/94 19940720 [1994US-0278010]

19980428 US/A

PATENT

20000613 US/RF

REISSUE APPLICATION FILED

20000427

UP - 2000-24

1 / 1 CRXX - ©CLAIMS/RRX

PN - 5,745,182 A 19980428 [US5745182]

PA - Matsushita Electric Industrial Co Ltd JP

ACT- 20000427 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20000613

REISSUE REQUEST NUMBER: 09/559627

EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2713

Reissue Patent Number:

20010413 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20030429

REISSUE REQUEST NUMBER: 09/833680

EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2713

Reissue Patent Number:

20010413 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20030429

REISSUE REQUEST NUMBER: 09/833769

EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2713

Reissue Patent Number:

20010413 REISSUE REQUESTED

ISSUE DATE OF O.G.: 20030429

REISSUE REQUEST NUMBER: 09/833770

EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2713

Reissue Patent Number:

20010530 REISSUE REQUESTED
ISSUE DATE OF O.G.: 20030429
REISSUE REQUEST NUMBER: 09/866811
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2713
Reissue Patent Number:

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Basic Patent (No, Kind, Date): CA 2082280 AA 19930509 <No. of Patents: 016>

Patent Family:

Patent No	Kind	Date	Applic No	Kind	Date	
AU 637289	B1	19930520	AU 9228162	A	19921104	
CA 2082280	AA	19930509	CA 2082280	A	19921105	(BASIC)
CA 2082280	C	19950207	CA 2082280	A	19921105	
DE 69225863	C0	19980716	DE 69225863	A	19921106	
DE 69225863	T2	19981022	DE 69225863	A	19921106	
EP 541389	A2	19930512	EP 92310187	A	19921106	
EP 541389	A3	19940330	EP 92310187	A	19921106	
EP 541389	B1	19980610	EP 92310187	A	19921106	
JP 5130594	A2	19930525	JP 91293004	A	19911108	
JP 6030395	A2	19940204	JP 92181980	A	19920709	
JP 2929044	B2	19990803	JP 91293004	A	19911108	
JP 2938677	B2	19990823	JP 92181980	A	19920709	
KR 9506774	B1	19950622	KR 9220769	A	19921106	
US 5369449	A	19941129	US 970046	A	19921102	
US 5745182	A	19980428	US 278010	A	19940720	
US 5978032	A	19991102	US 883315	A	19970626	

Priority Data (No, Kind, Date):

JP 91293004 A 19911108
JP 92181980 A 19920709
US 278010 A 19940720
US 970046 A3 19921102
US 883315 A 19970626
US 278010 A3 19940720

PATENT FAMILY:

AUSTRALIA (AU)

Patent (No, Kind, Date): AU 637289 B1 19930520
METHOD FOR PREDICTING MOVE COMPENSATION (English)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD
Author (Inventor): YUKITAKE TAKESHI; INOUE SHUJI
Priority (No, Kind, Date): JP 91293004 A 19911108; JP 92181980 A 19920709
Applic (No, Kind, Date): AU 9228162 A 19921104
IPC: * G06F-015/70; G06F-015/68; H04N-007/137
Language of Document: English

CANADA (CA)

Patent (No, Kind, Date): CA 2082280 AA 19930509
METHOD FOR PREDICTING MOVE COMPENSATION (English; French)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
Priority (No, Kind, Date): JP 91293004 A 19911108; JP 92181980 A 19920709
Applic (No, Kind, Date): CA 2082280 A 19921105
IPC: * H04N-007/12
Language of Document: English
Patent (No, Kind, Date): CA 2082280 C 19950207
METHOD FOR PREDICTING MOVE COMPENSATION (English; French)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
Priority (No, Kind, Date): JP 92181980 A 19920709; JP 91293004 A 19911108

Applic (No,Kind,Date): CA 2082280 A 19921105
IPC: * H04N-007/12
Derwent WPI Acc No: * G 93-154317
JAPIO Reference No: * 170511E000053; 180246E000083
Language of Document: English

GERMANY (DE)

Patent (No,Kind,Date): DE 69225863 CO 19980716
VERFAHREN ZUR PRAEDIKTIVEN KODIERUNG MIT BEWEGUNGSKOMPENSATION (German)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
Priority (No,Kind,Date): JP 91293004 A 19911108; JP 92181980 A
19920709

Applic (No,Kind,Date): DE 69225863 A 19921106
IPC: * H04N-007/24; H04N-007/32
Derwent WPI Acc No: * G 93-154317
JAPIO Reference No: * 170511E000053; 180246E000083
Language of Document: German

Patent (No,Kind,Date): DE 69225863 T2 19981022
VERFAHREN ZUR PRAEDIKTIVEN KODIERUNG MIT BEWEGUNGSKOMPENSATION (German)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
Priority (No,Kind,Date): JP 91293004 A 19911108; JP 92181980 A
19920709

Applic (No,Kind,Date): DE 69225863 A 19921106
IPC: * H04N-007/24; H04N-007/32
Derwent WPI Acc No: * G 93-154317
JAPIO Reference No: * 170511E000053; 180246E000083
Language of Document: German

GERMANY (DE)

Legal Status (No,Type,Date,Code,Text):

DE 69225863 P 19980716 DE REF CORRESPONDS TO (ENTSPRICHT)

DE 69225863 P 19981022 DE 8373 EP 541389 P 19980716
TRANSLATION OF PATENT
DOCUMENT OF EUROPEAN PATENT WAS RECEIVED AND
HAS BEEN PUBLISHED (UEBERSETZUNG DER
PATENTSCHRIFT DES EUROPÄISCHEN PATENTES IST
EINGEGANGEN UND VEROEFFENTLICHT WORDEN)
DE 69225863 P 19990708 DE 8364 NO OPPOSITION DURING TERM OF
OPPOSITION (EINSPRUCHSFRIST ABGELAUFEN OHNE
DASS EINSPRUCH ERHOBEN WURDE)

EUROPEAN PATENT OFFICE (EP)

Patent (No,Kind,Date): EP 541389 A2 19930512
METHOD FOR PREDICTING MOVE COMPENSATION (English; French; German)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
Priority (No,Kind,Date): JP 91293004 A 19911108; JP 92181980 A
19920709

Applic (No,Kind,Date): EP 92310187 A 19921106
Designated States: (National) BE; DE; FR; GB; NL; SE
IPC: * H04N-007/13
Derwent WPI Acc No: ; G 93-154317
Language of Document: English

Patent (No,Kind,Date): EP 541389 A3 19940330
METHOD FOR PREDICTING MOVE COMPENSATION (English; French; German)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
Priority (No,Kind,Date): JP 91293004 A 19911108; JP 92181980 A

19920709

Applic (No,Kind,Date): EP 92310187 A 19921106
Designated States: (National) BE; DE; FR; GB; NL; SE
IPC: * H04N-007/13
Derwent WPI Acc No: * G 93-154317
JAPIO Reference No: * 170511E000053
Language of Document: English

Patent (No,Kind,Date): EP 541389 B1 19980610
METHOD FOR PREDICTING MOVE COMPENSATION (English; French; German)
Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
Priority (No,Kind,Date): JP 92181980 A 19920709; JP 91293004 A 19911108

Applic (No,Kind,Date): EP 92310187 A 19921106
Designated States: (National) BE; DE; FR; GB; NL; SE
IPC: * H04N-007/24; H04N-007/32
Derwent WPI Acc No: * G 93-154317
JAPIO Reference No: * 170511E000053; 180246E000083
Language of Document: English

EUROPEAN PATENT OFFICE (EP)

Legal Status (No,Type,Date,Code,Text):

EP 541389	P	19911108	EP AA	PRIORITY (PATENT APPLICATION) (PRIORITAET (PATENTANMELDUNG))
				JP 91293004 A 19911108
EP 541389	P	19920709	EP AA	PRIORITY (PATENT APPLICATION) (PRIORITAET (PATENTANMELDUNG))
				JP 92181980 A 19920709
EP 541389	P	19921106	EP AE	EP-APPLICATION (EUROPAEISCHE ANMELDUNG)
				EP 92310187 A 19921106
EP 541389	P	19930512	EP AK	DESIGNATED CONTRACTING STATES IN AN APPLICATION WITHOUT SEARCH REPORT (IN EINER ANMELDUNG OHNE RECHERCHENBERICHT BENANNTE VERTRAGSSTAATEN)
				BE DE FR GB NL SE
EP 541389	P	19930512	EP A2	PUBLICATION OF APPLICATION WITHOUT SEARCH REPORT (VEROEFFENTLICHUNG DER ANMELDUNG OHNE RECHERCHENBERICHT)
EP 541389	P	19940330	EP AK	DESIGNATED CONTRACTING STATES IN A SEARCH REPORT (IN EINEM RECHERCHENBERICHT BENANNTE VERTRAGSSTAATEN)
				BE DE FR GB NL SE
EP 541389	P	19940330	EP A3	SEPARATE PUBLICATION OF THE SEARCH REPORT (ART. 93) (GESONDERTE VEROEFFENTLICHUNG DES RECHERCHENBERICHTS (ART. 93))
EP 541389	P	19941019	EP 17P	REQUEST FOR EXAMINATION FILED (PRUEFUNGSANTRAG GESTELLT) 940818
EP 541389	P	19951220	EP 17Q	FIRST EXAMINATION REPORT (ERSTER PRUEFUNGSBESCHEID) 951102
EP 541389	P	19980610	EP AK	DESIGNATED CONTRACTING STATES MENTIONED IN A PATENT SPECIFICATION: (IN EINER PATENTSCHRIFT ANGEFUEHRTE BENANNTE VERTRAGSSTAATEN)

		BE DE FR GB NL SE	
EP 541389	P	19980610 EP B1	PATENT SPECIFICATION
		(PATENTSCHRIJFT)	
EP 541389	P	19980716 EP REF	CORRESPONDS TO:
		(ENTSPRICHT)	
		DE 69225863 P	19980716
EP 541389	P	19980911 EP ET	FR: TRANSLATION FILED (FR:
		TRADUCTION A ETE REMISE)	
EP 541389	P	19990602 EP 26N	NO. OPPOSITION FILED (KEIN
		EINSPRUCH EINGELEGT)	
EP 541389	P	20020101 GB IF02/REG	EUROPEAN PATENT IN FORCE AS
		OF 2002-01-01	

JAPAN (JP)

Patent (No, Kind, Date): JP 5130594 A2 19930525
 DEVICE FOR PREDICTIVE ENCODING BETWEEN MOTION-COMPENSATED FRAMES
 (English)

Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD
 Author (Inventor): INOUE SHUJI
 Priority (No, Kind, Date): JP 91293004 A 19911108
 Applic (No, Kind, Date): JP 91293004 A 19911108
 IPC: * H04N-007/137; H03M-007/30
 JAPIO Reference No: ; 170511E000053
 Language of Document: Japanese

Patent (No, Kind, Date): JP 6030395 A2 19940204
 METHOD FOR PREDICTING MOTION COMPENSATION (English)

Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD
 Author (Inventor): NAMETAKE TAKESHI; INOUE SHUJI
 Priority (No, Kind, Date): JP 92181980 A 19920709
 Applic (No, Kind, Date): JP 92181980 A 19920709
 IPC: * H04N-007/137
 JAPIO Reference No: ; 180246E000083
 Language of Document: Japanese

Patent (No, Kind, Date): JP 2929044 B2 19990803
 Priority (No, Kind, Date): JP 91293004 A 19911108

Applic (No, Kind, Date): JP 91293004 A 19911108
 IPC: * H04N-007/32; H03M-007/30
 Derwent WPI Acc No: * G 93-154317
 JAPIO Reference No: * 170511E000053
 Language of Document: Japanese

Patent (No, Kind, Date): JP 2938677 B2 19990823
 Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD

Author (Inventor): NAMETAKE TAKESHI; INOUE SHUJI
 Priority (No, Kind, Date): JP 92181980 A 19920709
 Applic (No, Kind, Date): JP 92181980 A 19920709
 IPC: * H04N-007/32
 Language of Document: Japanese

KOREA, REPUBLIC (KR)

Patent (No, Kind, Date): KR 9506774 B1 19950622
 MOTION COMPENSATION PREDICTIVE METHOD (English)
 Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
 Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SYUJI (JP)
 Priority (No, Kind, Date): JP 91293004 A 19911108; JP 92181980 A 19920709

Applic (No, Kind, Date): KR 9220769 A 19921106
 IPC: * H04N-007/24
 Derwent WPI Acc No: * G 93-154317
 JAPIO Reference No: * 170511E000053; 180246E000083
 Language of Document: Korean

UNITED STATES OF AMERICA (US)

Patent (No,Kind,Date): US 5369449 A 19941129
 METHOD FOR PREDICTING MOVE COMPENSATION (English)
 Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
 Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
 Priority (No,Kind,Date): JP 92181980 A 19920709; JP 91293004 A 19911108
 Applic (No,Kind,Date): US 970046 A 19921102
 National Class: * 348699000; 348416000
 IPC: * H04N-007/137
 Derwent WPI Acc No: * G 93-154317
 JAPIO Reference No: * 170511E000053; 180246E000083
 Language of Document: English
 Patent (No,Kind,Date): US 5745182 A 19980428
 METHOD FOR DETERMINING MOTION COMPENSATION (English)
 Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
 Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
 Priority (No,Kind,Date): US 278010 A 19940720; JP 91293004 A 19911108; JP 92181980 A 19920709; US 970046 A3 19921102
 Applic (No,Kind,Date): US 278010 A 19940720
 Addnl Info: 5369449 Patented
 National Class: * 348416000; 348699000
 IPC: * H04N-007/32
 Derwent WPI Acc No: * G 93-154317
 JAPIO Reference No: * 170511E000053; 180246E000083
 Language of Document: English
 Patent (No,Kind,Date): US 5978032 A 19991102
 METHOD FOR PREDICTING MOTION COMPENSATION (English)
 Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (JP)
 Author (Inventor): YUKITAKE TAKESHI (JP); INOUE SHUJI (JP)
 Priority (No,Kind,Date): US 883315 A 19970626; JP 91293004 A 19911108; JP 92181980 A 19920709; US 278010 A3 19940720; US 970046 A3 19921102
 Applic (No,Kind,Date): US 883315 A 19970626
 Addnl Info: 5745182 Patented; 5369449 Patented
 National Class: * 348416000; 348699000
 IPC: * H04N-007/32
 Derwent WPI Acc No: * G 93-154317
 JAPIO Reference No: * 170511E000053; 180246E000083
 Language of Document: English

UNITED STATES OF AMERICA (US)

Legal Status (No,Type,Date,Code,Text):

US 5369449	P	19911108	US AA	PRIORITY (PATENT)
			JP 91293004 A	19911108
US 5369449	P	19920709	US AA	PRIORITY (PATENT)
			JP 92181980 A	19920709
US 5369449	P	19921102	US AE	APPLICATION DATA (PATENT)
			(APPL. DATA (PATENT))	
			US 970046 A	19921102
US 5369449	P	19921102	US AS02	ASSIGNMENT OF ASSIGNOR'S INTEREST
			MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. 1006, OAZA KADOMA, KADOMA-SHI OSAKA, JAP ; YUKITAKE, TAKESHI : 19921028; INOUE, SHUJI : 19921028	
US 5369449	P	19941129	US A	PATENT
US 5745182	P	19911108	US AA	PRIORITY (PATENT)
			JP 91293004 A	19911108
US 5745182	P	19920709	US AA	PRIORITY (PATENT)
			JP 92181980 A	19920709

US 5745182	P	19921102	US AA	PRIORITY
		US 970046	A3	19921102
US 5745182	P	19940720	US AE	APPLICATION DATA (PATENT)
		(APPL. DATA (PATENT))		
		US 278010	A	19940720
US 5745182	P	19980428	US A	PATENT
US 5745182	P	20000613	US RF	REISSUE APPLICATION FILED
		(REISSUE APPL. FILED)		
		20000427		
US 5978032	P	19911108	US AA	PRIORITY (PATENT)
		JP 91293004	A	19911108
US 5978032	P	19920709	US AA	PRIORITY (PATENT)
		JP 92181980	A	19920709
US 5978032	P	19921102	US AA	PRIORITY
		US 970046	A3	19921102
US 5978032	P	19940720	US AA	PRIORITY
		US 278010	A3	19940720
US 5978032	P	19970626	US AE	APPLICATION DATA (PATENT)
		(APPL. DATA (PATENT))		
		US 883315	A	19970626
US 5978032	P	19991102	US A	PATENT

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

5745182

<=1> GET 1st DRAWING SHEET OF 6
<=32> Link to Claims Section

April 28, 1998

Method for determining motion compensation

REISSUE: Reissue Application filed Apr. 27, 2000 (O.G. Jun. 13, 2000) Ex. Gp.: 2713; Re. S.N. 09/559,627, (O.G. June 13, 2000)
April 13, 2001 - Reissue Application filed Ex. Gp.: 2713; Re. S.N. 09/833,680 (O.G. April 29, 2003)
April 13, 2001 - Reissue Application filed Ex. Gp.: 2713; Re. S.N. 09/833,769 (O.G. April 29, 2003)
April 13, 2001 - Reissue Application filed Ex. Gp.: 2713; Re. S.N. 09/833,770 (O.G. April 29, 2003)
May 30, 2001 - Reissue Application filed Ex. Gp.: 2713; Re. S.N. 09/866,811 (O.G. April 29, 2003)

INVENTOR: Yukitake, Takeshi - Yokohama, Japan (JP); Inoue, Shuji - Yokohama, Japan (JP)

APPL-NO: 278010 (08)

FILED-DATE: July 20, 1994

GRANTED-DATE: April 28, 1998

PRIORITY: November 8, 1991 - 3293004, Japan (JP); July 9, 1992 - 4181980, Japan (JP)

ASSIGNEE-AT-ISSUE: Matsushita Electric Industrial Co., Ltd., Osaka, Japan (JP), 03

LEGAL-REP: Watson Cole Stevens Davis, PL

PUB-TYPE: April 28, 1998 - Utility Patent having no previously published pre-grant publication (A)

LEXIS-NEXIS
Library: PATENT
File: ALL

LEGAL-REP: Watson Cole Stevens Davis PL

PUB-TYPE: April 28, 1998 - Utility Patent having no previously published pre-grant publication (A)

PUB-COUNTRY: United States (US)

REL-DATA:

Division of Ser. No. 07/970046, November 2, 1992, GRANTED 5369449

US-MAIN-CL: 375#240.16

US-ADDL-CL: 348#699

CL: 375, 348

SEARCH-FLD: 348#413, 348#416, 348#699, 348#400.-402, 348#407, 348#409.-412, 348#384, 348#390, 348#415

IPC-MAIN-CL: 6H 04N007#32

PRIM-EXMR: Lee, Richard

REF-CITED:

- <=2> 04691230, September, 1987, Kaneko et al., United States (US), 348699
- <=3> 04862266, August, 1989, Gillard, United States (US), 348699
- <=4> 04864294, September, 1989, Gillard, United States (US)
- <=5> 04989089, January, 1991, Chantelou et al., United States (US)
- <=6> 04998168, March, 1991, Gillard, United States (US), 348699
- <=7> 05021881, June, 1991, Avis et al., United States (US), 348699
- <=8> 05027205, June, 1991, Avis et al., United States (US), 348699
- <=9> 05036393, July, 1991, Samad et al., United States (US), 348699
- <=10> 05049991, September, 1991, Niihara, United States (US), 358105
- <=11> 05072293, December, 1991, De Haan et al., United States (US), 348699
- <=12> 05093720, March, 1992, Krause et al., United States (US), 358133
- <=13> 05105271, April, 1992, Niihara, United States (US), 358105
- <=14> 05132792, July, 1992, Yonemitsu et al., United States (US), 358105
- <=15> 05138446, August, 1992, Guichard et al., United States (US), 348699
- <=16> 05142361, August, 1992, Tayama et al., United States (US), 348699
- <=17> 05144427, September, 1992, Kitaura et al., United States (US), 358105
- <=18> 05157742, October, 1992, Niihara, United States (US), 348699
- <=19> 05162907, November, 1992, Keating et al., United States (US), 358105
- <=20> 05175618, December, 1992, Ueda et al., United States (US), 358105
- <=21> 05191414, March, 1993, Sugiyama, United States (US)

5,745,182 OR 5745182

LEADS-NEADS
Library: PATENT
File: CASES

Your search request has found no CASES.

To edit the above request, use the arrow keys. Be sure to move the cursor to the end of the request before you enter it.

To enter a new search request, type it and press the ENTER key.

What you enter will be Search Level 1.

For further explanation, press the H key (for HELP) and then the ENTER key.

Your search request has found no ITEMS.

To edit the above request, use the arrow keys. Be sure to move the cursor to the end of the request before you enter it.

To enter a new search request, type it and press the ENTER key.

What you enter will be Search Level 1.

For further explanation, press the H key (for HELP) and then the ENTER key.

Your search request has found no STORIES.

To edit the above request, use the arrow keys. Be sure to move the cursor to the end of the request before you enter it.

To enter a new search request, type it and press the ENTER key.

What you enter will be Search Level 1.

For further explanation, press the H key (for HELP) and then the ENTER key.